DOCUMENT RESUME

ED 052 680 HE 002 283

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TITLE Grade Point Averages: Honors v.s. Non-Honors Courses. Indiana Studies in Prediction, Number 15.
INSTITUTION Indiana Univ., Bloomington. Bureau of Educational Studies and Testing.
PUB DATE Apr 71
NOTE 17p.

EDRS PRICE EDRS Price MF-$0.65 HC-$3.29
DESCRIPTORS *College Students, *Grade Point Average, *Grades (Scholastic), *Honors Curriculum

ABSTRACT

The purpose of this study was to determine if Honors courses produce lower gradepoint averages than non-honors courses. The gradepoint averages of 230 students who enrolled in Honors courses in 1965 to 1966 were computed for both the Honors and the non-Honors courses they took. The figures were computed for courses taken at each level, i.e., freshman through senior levels, as well as the total GPA's for the 4-year program. Comparisons of Honors and non-Honors GPA's were made by year as well as for the 4-year program, and an analysis of variance was used to test the statistical significance of differences between Honors and non-Honors GPA's. The findings indicated that Honors courses do not penalize, and indeed may enhance, GPA's of the students invited into the program. However, the range of grades given to these students may be slightly greater in Honors courses than in non-Honors courses. (AF)

INDIANA UNIVERSITY / 1971

Grade Point Averages: Honors v.s. Non-Honors Courses

INDIANA STUDIES IN PREDICTION

NUMBER FIFTEEN

Bureau of Educational Studies and Testing

INDIANA STUDIES IN PREDICTION NO. 15

GRADE POINT AVERAGES:
HONORS V.S. NON-HONORS COURSES

by

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April 1971

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GRADE POINT AVERAGES: HONORS V.S. NON-HONORS COURSES

College student cultures operate on a good deal of fact, intermingled with considerable folklore. Rumors that persist among student groups often become widely acceptable as fact, even though no one can point to the data base for the ideas involved.

One such item that perennially travels on the student rumor circuit deals with Honors courses. Since these classes are characteristically broader in scope, or more penetrating in depth, or both of these, students see them as challenging, but at the same time slightly threatening. Also, since students in Honors courses are chosen because they are most academically talented, the competition for grades appears unusually difficult. For these reasons students often surmise that taking Honors courses places one's grade point average in unusual jeopardy. A rumor to this effect persistently circulates around the campus, achieving the status of folklore.

It is, therefore, the purpose of this study to put a data base under the rumor. Do Honors courses indeed produce lower grade point averages than non-Honors courses?

Method

In a typical experimental design a group of subjects is designated to get a given special treatment. This group is then compared with another one that does not get the special treatment. Assignment to groups by random means is desirable in that it should equalize various conditions--such as ability, personality, etc.--that bear on the outcomes of the study. Without randomization, a second alternative involves equating on important variables a group of subjects (known as the "control" group) with the special treatment group. But this assumes that we know and can measure the important variables.

In this study 230 students who enrolled in Honors courses in 1965-66 were the experimental subjects. The Honors courses were the experimental treatment, assessed by grade points in these courses. To avoid the hazards of selecting a matched group for comparison, these same Honors students were also used as their own controls. Grade points in their non-Honors courses were used as the basis of evaluating the grades in the Honors program.

For the 230 students grade transcripts for their four academic years were secured from the Records Office. Only courses taken at the Bloomington campus, excluding

summer sessions, were considered in the study. Any grade of incomplete which had not been replaced by a letter grade, was excluded from the data. For each student two grade point averages (GPA) were computed: a GPA for Honors courses, and a GPA for non-Honors courses. These figures were computed for courses taken at each class level--i.e., first for courses taken in the freshman year, then courses taken in the sophomore year, the junior, and then the senior year. Lastly the total GPAs for the four year program were computed. Comparisons of Honors and non-Honors GPAs were made by year as well as for the four year program. Analysis of variance was used to test the statistical significance of differences between Honors and non-Honors GPAs.

The group was not divided by sex because a previous study (Chase and Hemmeter 1970) indicated considerable homogeneity in interest, background and ability between the sexes in Honors students.

Results

Results of the analysis of data are presented in two forms. First, the basic descriptive data--averages and dispersions of GPAs--are provided so that a visual comparison can be made among the classes. Following this, the tables showing the results of the analysis of variance are provided.

Table 1 shows the descriptive data for GPAs obtained by students during each of their four undergraduate years. One student in the study began his Honors work after the freshman year, so of the 230 subjects in the study only 229 are shown in the freshman year. Of these students, only 73 took Honors work as sophomores, 34 as juniors, and 26 as seniors. Data at each class level are based only on the students who took Honors work during a given year. The last line in the table, the total GPA figures, is based on all non-Honors against all Honors work taken by the 230 subjects during the four year period.

TABLE 1. Means and Medians of Non-Honors GPAs Compared With Honors GPAs.

Class Level	N	Non-Honors Mean	Honors Mean	Diff	Non-Honors Median	Honors Median	Diff
Senior	26	3.47	3.76	.29	3.60	3.83	.23
Junior	34	3.41	3.63	.22	3.50	3.79	.29
Sophomore	73	3.14	3.21	.07	3.24	3.19	-.05
Freshman	229	2.84	3.24	.40	2.98	3.05	.07
TOTAL	230	2.89	3.18	.29	3.10	3.00	-.10

The data in Table 1 are further elaborated by Figure 1. Here the solid black line indicates the total range of GPAs made in a given year in Honors, and

again in non-Honors courses. The shaded bar indicates the range of the middle fifty per cent of GPAs within the data base indicated by either Honors or non-Honors. Means and medians are also noted. These figures are in part redundant with Table 1, but also elaborate on the table by presenting a wider range of references.

Several points illustrated in Table 1 and in Figure 1 should be cited. First of all, the non-Honors GPA and the Honors GPA for the total four year period are especially interesting. The Honors average is actually higher than the non-Honors average. The student folklore would have predicted this to be untrue.

A quick scan of Table 1 shows that the above conclusion is true for every class level. Honors courses at all levels produced slightly higher GPAs than non-Honors courses.

Figure 1, however, indicates that the distributions of grades are markedly skewed. Typically this results in the mean value being pulled in the direction of the widely deviating GPAs. Since the Honors courses produced the most widely deviating GPAs in the direction of the lower end of the distribution, it is typically expected that the mean (arithmetic average) will be

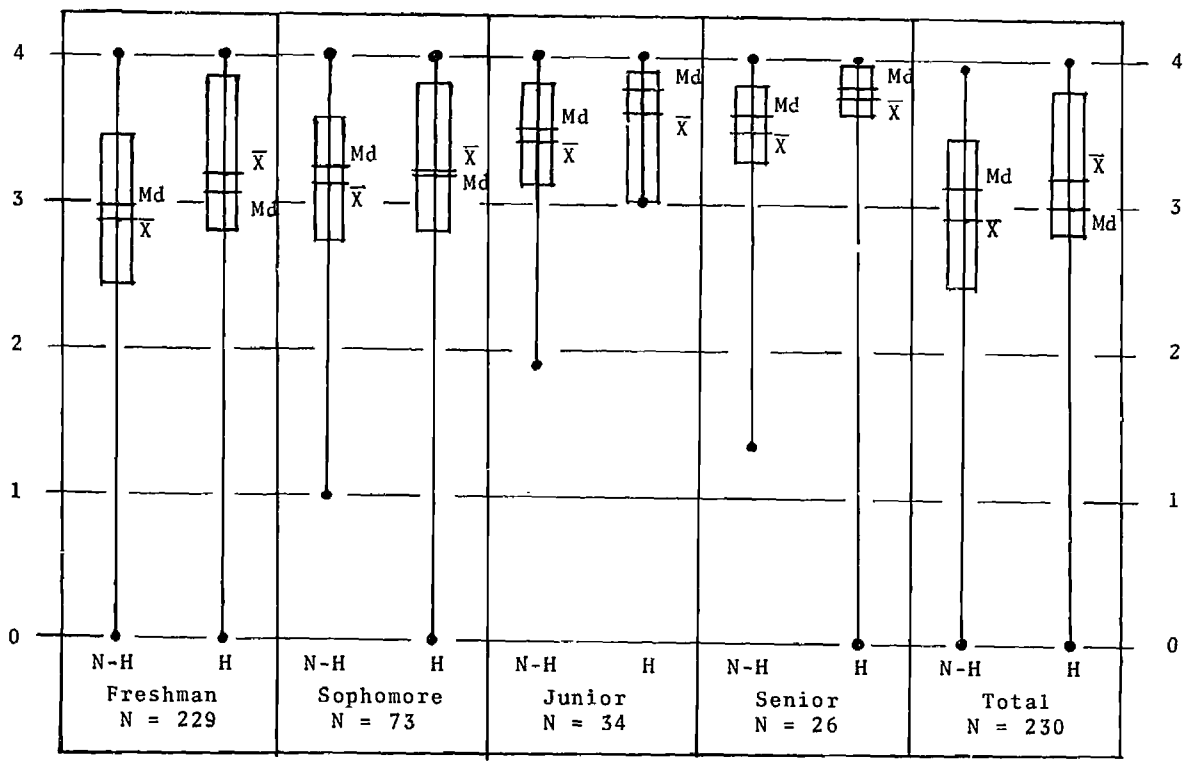

FIGURE 1. GRADE POINT AVERAGE DISTRIBUTION

N-H = Non-Honors
H = Honors

lower than the median (the point that divides the distribution in the middle with 50 per cent of the cases on either side). In seven of the ten distributions in Figure 1, this is the case.

Due to the skewness of the distributions the median may be considered a "better" average than the mean because its location is not so much influenced by the very few widely deviating, in this case low, GPAs, GPAs which are clearly atypical of this group of students. In the second half of the Table 1 the median scores are also presented. The similarity between Honors GPAs and non-Honors GPAs is more marked with the median data than with the mean. With skewness of distributions, and Figure 1 clearly reveals skewness, the median can be accepted as an "average" which best fits the central bulk of the GPAs, and hence more precisely an indication of "typical" performance for the group.

If the median is regarded as the "best average," the differences between Honors and non-Honors GPAs is even smaller than when the mean was used to indicate typical performance. In three of the five comparisons the Honors GPA produced the higher median than the non-Honors GPA. In any case the generalization appears

to hold that students are not penalized in GPA by Honors courses.

A statistical test was applied to the data to see if the differences between means of the two GPAs--Honors and non-Honors--was a significant one, or whether it could be accounted for by chance sampling variations. Analysis of variance, with repeated measures, was used for this test. The results are given in Table 2. If

TABLE 2. Results of the Analysis of Variance.

Class Level	F	df	p
Senior	3.70	1,25	.063
Junior	4.52	1,33	.039
Sophomore	0.71	1,72	.593
Freshman	41.88	1,228	<.001
TOTAL	44.57	1,229	<.001

the familiar .05 level is applied, the results of the analysis of variance reveal a significant (unlikely by chance) difference at the freshman and junior years, and for the total four year GPA. The sophomore and senior years did not produce significant differences between Honors and non-Honors GPAs. Since the freshman year contributed a proportionately large amount

to the Honors GPA, it had a greater effect on the total Honors GPA than did any other year. This probably accounts for the similarity of total GPA and the freshman GPA findings. Of course, in the two years where signi icant differences appear, the difference was in favor of the Honors over the non-Honors GPA.

The statistical test supports the subjective conclusion reached by scanning Table 1 and Figure 1. Students do not appear to be penalized in GPA by taking Honors courses. In fact, if anything, students' GPAs get a boost from Honors courses. The small size of classes, the stimulation of a carefully selected faculty, the colleagueship of the more capable students all would tend to make this so.

Figure 1 has added information of interest in comparing Honors and non-Honors work--the dispersion or spread, of GPAs. The broader bar indicates the range of GPAs for the middle fifty per cent of the students. This group was chosen because they may be thought of as most typical of the total group. In the first three of the four class levels the non-Honors GPAs for the middle fifty per cent indicates more homogeneity in grades for the non-Honors work than for the Honors work. This may mean that there is indeed a wider

range of quality of performance in Honors classes. It may also mean that in Honors classes a more comprehensive, less superficial evaluation of student work is possible. If this is true a more accurate location of the student, relevant to course criteria, could be made, placing some students high on the GPA scale, others lower. When grosser evaluations must be made, as is true in large classes, careful discrimination cannot be so readily made among capable students. Hence, the tendency is to classify them into one category, producing a set of relatively homogeneous grades.

In Figure 1 the solid black vertical line through each course type group, at each class level, indicates the total range of GPAs for that set of data. Although no clear pattern emerges in these ranges, it is clear that Honors instructors do not report blanket high grades. Some students do fail Honors courses. In fact this event appears to happen more often than failure of non-Honors courses.

Summary and Conclusion

A group of 230 Honors students were identified as freshmen and their academic records collected over the four years of their academic program. For each

year of the program, for each student, one GPA was computed on the courses taken in the Honors program, another on non-Honors courses. For each year of the four year program the Honors GPAs were compared with non-Honors GPAs. This comparison was also made for GPAs for the total four years. The purpose of this comparison was to see if the more expansive and/or intensive Honors courses penalized students in GPA.

The conclusion was as follows. Honors courses do not penalize, and indeed may enhance, GPAs of the students invited into the program. However, the range of grades given to these students may be slightly greater in Honors courses than in non-Honors courses.

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